CAS 87-68-3

Substance name Hexachlorobutadiene (HCDB)

Toxicity

Hexachlorobutadiene is classified as a possible human carcinogen by the U.S. EPA.[1] HCBD is genotoxic in mammalian cell cultures and binds with DNA in rats and mice *in vivo*.[2] Studies in animals show a selective adverse effect of HCBD on the kidney, specifically the proximal tubule.[3,4] HCDB accumulates in brain tissue and is neurotoxic in animal studies.[3,4] HCBD caused reproductive and developmental effects at oral doses that were neurotoxic and damaged the kidney of the mothers.[4]

Exposure

This substance is listed as a Persistent, Bioaccumulative and Toxic (PBT) chemical under Washington State's PBT rule (WAC 173-333-320).[5] HCBD is used as an industrial solvent and chemical intermediate in the manufacturer of rubber compounds, chlorofluorocarborns, and lubricants. It is also formed as a byproduct during the manufacture of some chlorinated compounds.[2] It has been widely detected in ambient air, water, foods and human tissues.[6]

References

1. U.S. EPA Integrated Risk Information System (IRIS) for Hexachlorobutadiene (CASRN 87-68-3). Last revised 1991. http://www.epa.gov/iris/subst/0058.htm.
2. California, EPA, Office of Environmental Health Hazard Assessment, Reproductive and Cancer Hazard Assessment Section. Evidence on the Carcinogenicity of 1,3-Hexachlorobutadiene, December 2000. http://ntp.niehs.nih.gov/ntp/htdocs/Chem_Background/ExSumPDF/Hexachlorobutadiene.pdf
3. U.S. DHHS, Agency for Toxic Substances & Disease Registry Toxicological Profile for Hexachlorobutadiene, May 1994. http://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=865&tid=168.
4. U.S. EPA, Office of Water, Health and Ecological Criteria Division. Health Effects Support Document for Hexachlorbutadiene, February 2003. http://water.epa.gov/action/advisories/drinking/upload/2004_01_16_reg_determine1_support_cc1_hexachlorobutadiene_healtheffects.pdf.
5. WA Department of Ecology. Summary of Technical Background Information for the Proposed PBT List (Revised Draft) October 2005.
6. WHO, International Agency for Research on Cancer (IARC), Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 73, Some Chemicals that Cause Tumors of the Kidney or Urinary Bladder in Rodents and Some Other Substances, 1999.